

J.B.I. Inc.  
18521 S. Santa Fe Ave.  
Rancho Dominguez, CA 90220  
ID#: 24647

## **EQUIPMENT DESCRIPTION**

### **A/N 555898 (Modification P/O D57295, A/N 222532) - P/O:**

AQUEOUS SOLUTION LINE CONSISTING OF:

1. SPRAY RINSE, TANK NO. 3, 6'-0" L. X 9'-0" W. X 2'-6" H., WITH ONE 1,500,000 BTU/HR NATURAL GAS-FIRED BURNER (RULE 219 EXEMPT). HEATED.
2. CLEANING, TANK NO. 1, 14'-0" L. 9'-0" W. X 2'-6" H., WITH ONE 3,300,000 BTU/HR NATURAL GAS-FIRED MAXON LOW-NOX BURNER, MODEL NO. XPO-3. 3,000,000 BTU/HR GAS HEATED.
3. ASSOCIATED RINSE TANKS.

### **A/N 555899: Title v permit revision application**

## **BACKGROUND**

J.B.I. submitted A/N 555898 to modify an existing open process tank line. Specifically, they want to swap the current 3.0 MMBtu/hr burner found in cleaning tank no. 1 with a 3.3 MMBtu/hr Maxon low-NOx burner. The new burner is designed to emit NOx at 30 ppmv corrected to 3% O<sub>2</sub> to comply with Rule 1147. The burner of tank no. 3 does not need to comply with Rule 1147, since it is Rule 219 exempt under (b)(2) and (p)(4).

J.B.I. is a Title V facility. A Title V renewal permit was issued to this facility on 9/2/2011. J.B.I. has proposed to revise their Title V permit by changing the burner in an open process tank. The permit revision is considered as a "de minimis significant permit revision" to the Title V renewal permit, as described in Regulation XXX evaluation.

The facility was last inspected on 6/6/2012 and was found to be operating in compliance. They have not received an NC or NOV within the last two years. No public nuisance complaints have been filed against them.

## **PROCESS DESCRIPTION**

J.B.I. produces fiberglass furniture for the fast-food industry. They operate spray booths (liquid and powder), abrasive blasting equipment, baghouses, ovens and an open process tank line. The facility is limited to 20 ton/yr VOC for Rule 1132 exemption and 10 ton/yr (single

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HAP) and 25 ton/yr (combination of HAPs) for NESHAP exemption.

The open process tanks are used to clean metal items of surface impurities to improve powder coating adhesion. The tanks primarily contain phosphoric acid and water. Under the proposed project, the concentrations of solutions found in the tanks will not changed. The tank line will operate as previously permitted.

**EMISSION ESTIMATES**

The Maxon burner has been designed to emit NOx at 30 ppmv, corrected to 3% O<sub>2</sub>. Emissions based on new burner, 3.3 MMBtu/hr.

	<u>maximum</u>	<u>normal</u>		
<u>hr/dy</u>	24	8	<u>max heat input</u>	3.30E+06 (BTU/hr)
<u>dy/wk</u>	7	5	<u>gross heating value</u>	1050 (BTU/scf)
<u>wk/yr</u>	52	52		
<u>load</u>	100%	100%		

  

	<u>Emission</u>	<u>MAX</u>	<u>AVE</u>	<u>MAX</u>	<u>30-DAY</u>	<u>MAX</u>	<u>MAX</u>
	<u>Factors</u>	(lb/hr)	(lb/hr)	(lb/dy)	(lb/dy)	(lb/yr)	(ton/yr)
SO <sub>2</sub> (R1)	0.83	0.003	0.003	0.063	NA	23	0.011
SO <sub>2</sub> (R2)	0.83	0.003	0.003	0.063	0.063	23	0.011
NO <sub>2</sub> (R1)	130	0.409	0.409	9.806	NA	3,569	1.785
NO <sub>2</sub> (R2)	38.46	0.121	0.121	2.901	2.901	1,056	0.528
CO (R1)	35	0.110	0.110	2.640	NA	961	0.480
CO (R2)	35	0.110	0.110	2.640	2.640	961	0.480
PM, PM <sub>10</sub> (R1=R2)	7.5	0.024	0.024	0.566	0.566	206	0.103
TOC(R1=R2)	7	0.022	0.022	0.528	0.528	192	0.096
acetaldehyde	0.0043	1.4E-05	1.4E-05	3.2E-04	NA	1.18E-1	5.90E-5
acrolein	0.0027	8.5E-06	8.5E-06	2.0E-04	NA	7.41E-2	3.71E-5
ammonia	3.2	1.0E-02	1.0E-02	2.4E-01	NA	8.79E+1	4.39E-2
benzene	0.008	2.5E-05	2.5E-05	6.0E-04	NA	2.20E-1	1.10E-4
ethyl benzene	0.0095	3.0E-05	3.0E-05	7.2E-04	NA	2.61E-1	1.30E-4
formaldehyde	0.017	5.3E-05	5.3E-05	1.3E-03	NA	4.67E-1	2.33E-4
hexane	0.0063	2.0E-05	2.0E-05	4.8E-04	NA	1.73E-1	8.65E-5
napthalene	0.0003	9.4E-07	9.4E-07	2.3E-05	NA	8.24E-3	4.12E-6
PAH's	0.0001	3.1E-07	3.1E-07	7.5E-06	NA	2.75E-3	1.37E-6
propylene	0.731	2.3E-03	2.3E-03	5.5E-02	NA	2.01E+1	1.00E-2
toluene	0.0366	1.2E-04	1.2E-04	2.8E-03	NA	1.00E+0	5.02E-4
xylenes	0.0272	8.5E-05	8.5E-05	2.1E-03	NA	7.47E-1	3.73E-4

  

NO <sub>2</sub> @ 3% excess O <sub>2</sub> ----->>>	29.63	(ppmv)	SO <sub>2</sub> @ 3% excess O <sub>2</sub> ----->>>	0.46	(ppmv)
CO @ 3% excess O <sub>2</sub> ----->>>	44.29	(ppmv)	PM @ 12% CO <sub>2</sub> ----->>>	5.5E-09	(grain/ft <sup>3</sup> )

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#### **Emissions Summary**

	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>ROG (lb/hr)</b>	<b>SO<sub>x</sub> (lb/hr)</b>
Previous	0.371	0.1	0.021	0.02	0.002
New	0.121	0.11	0.024	0.022	0.003
Difference	-0.25	0.01	0.003	0.002	0.001
Difference (lb/day, 24 hr/day)	-6	0.24	0.07	0.05	0.02

#### **Greenhouse Gas Emissions:**

CO<sub>2</sub> = 3.3 MMBtu/hr \* 116.89 lb/MMBtu = 385.7 lb/hr

CH<sub>4</sub> = 3.3 MMBtu/hr \* 0.002 lb/MMBtu = 0.01 lb/hr

PM emissions from the process tanks are unchanged from previously determined, R1 = R2 = 0.54 lb/hr.

### **RISK ASSESSMENT**

Due to the increase in burner size, there is a slight increase in toxic air contaminants. A risk assessment was performed and was based on the burner increase, 300,000 Btu/hr. From the assessment, the cancer risk was estimated as 2.03E-09 and 3.03E-09 at the residential and commercial receptors, respectively. The calculated acute and chronic health risks are below 1. See application folder for assessment spreadsheets.

### **RULE ANALYSIS**

RULE 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school. The facility is not located within 1,000 feet of the outer boundary of a school, the closest school (Colin Powell Elementary School) is 3,270 feet away. A public notice is not required under this section of the rule.

Rule 212 (c)(2): This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212 (g). The proposed project will not result in an emission increase from the facility in excess of the limits. A public notice is not required under this section of the rule.

Rule 212 (c)(3): This section requires a public notice for any new or modified permit unit with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in an MICR equal or greater than one in a million per permit unit or ten in a million per facility. The proposed project will not result in a cancer risk equal or greater than one in a million or ten in a million for the facility. A public notice is not required under this section of the rule.

Rule 212 (g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums specified by 212 (g). The proposed project will not result in an emission increase from the source in excess of the limits. A public notice is not required under this section of the rule.

RULES 401 & 402: AQMD database has no records of visible emissions or nuisance complaints against this facility. Compliance with these requirements is expected with the proper operation of the equipment.

RULE 407: The new burner is not expected to result in the release of CO emissions exceeding 2,000 ppmv. CO emissions are based on 50 ppmv. Compliance is expected.

RULE 409: PM emissions from the new burner is expected to be less than 0.1 gr/scf. Compliance is expected.

RULE 1147: The new burner is designed to operate at 30 ppmv NO<sub>x</sub> corrected to 3% O<sub>2</sub>. Compliance is expected.

RULE 1303 (a): Emission increases are well below 1 lb/day (largest is CO = 0.24 lb/day), BACT is not required.

RULE 1303 (b)(1): Modeling is not required since hourly NO<sub>x</sub>, CO and PM<sub>10</sub> emissions are below threshold levels.

	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>
Actual	0.121	0.11	0.024
Limit	0.31	17.1	1.9

RULE 1303 (b)(2): Emission increases are less than 0.42 lb/day, offsets are not required.

RULE 1303 (b)(4)/(b)(5): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: Compliance is expected, see RISK ASSESSMENT section of this report.

REGULATION XXX: This facility is not in the RECLAIM program. The proposed project is considered as a “de minimis significant permit revision” to the Title V permit for this facility.

Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

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Air Contaminant	Daily Maximum (lb/day)
HAP	30
VOC	30
NOx	40
PM10	30
Sox	60
CO	220

To determine if a project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the third permit revision to the Title V renewal permit issued to this facility on September 2, 2011. Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a “de minimis significant permit revision”. The following table summarizes the cumulative emission increases resulting from all permit revisions since the renewal Title V permit was issued:

Revision	HAP	VOC	NOx	PM <sub>10</sub>	SOx	CO
Previous Permit Revision Total	0	0	0	0	0	0
1 <sup>st</sup> Revision: Modification of oven (A/N 519127) and administrative change of condition to ten spray booths(A/Ns 523980, 523983, 523985, 523987, 523989, 523991, 523992, 523994-96)	0	0	0	0	0	0
2 <sup>nd</sup> Revision: Replace burner in open process tank (A/N 555898)	0	0	-6	0	0	0
Net Emission Total	0	0	-6	0	0	0
Maximum Daily	30	30	40	30	60	220

**RECOMMENDATION:**

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis significant permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.

**CONDITIONS:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.  
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.  
[RULE 204]
3. THE OXIDES OF NITROGEN (NO<sub>x</sub>) EMISSIONS DISCHARGED FROM THE BURNER OF TANK NO. 1 SHALL NOT EXCEED 30 PPM, CALCULATED AS NO<sub>2</sub> BY VOLUME ON A DRY BASIS @ 3% OXYGEN, AVERAGED OVER 30 CONSECUTIVE MINUTES.  
[RULE 1147]
4. THE OWNER OR OPERATOR OF THIS EQUIPMENT SHALL CONDUCT A SOURCE TEST TO VERIFY COMPLIANCE WITH CONDITION NO. 3 AND RULE 1147 UNDER THE FOLLOWING CONDITIONS:
  - A. THE TESTS SHALL BE CONDUCTED WITHIN 45 DAYS AFTER DISTRICT APPROVAL OF THE SOURCE TEST PROTOCOL.
  - B. THE TESTS SHALL MEASURE NO<sub>x</sub>, CO, OXYGEN CONTENT, MOISTURE CONTENT, TEMPERATURE, AND THE EXHAUST FLOW RATE AT THE OUTLET OF THIS EQUIPMENT, AT THE NORMAL OPERATING LOAD, USING THE APPROPRIATE TEST METHODS SPECIFIED IN RULE 1147. THE REPORT SHALL PRESENT THE EMISSION DATA IN POUNDS PER HOUR, AND PARTS PER MILLION ON A DRY BASIS CORRECTED TO 3% OXYGEN.
  - C. IN CASE THIS EQUIPMENT OPERATES WITH VARIABLE HEAT INPUT THAT MAY FALL BELOW 50% OF THE RATED HEAT INPUT CAPACITY DURING NORMAL OPERATION, A TEST SHALL ALSO BE CONDUCTED AS SPECIFIED IN SECTION B OF THIS CONDITION ABOVE, BUT USING A HEAT INPUT OF LESS THAN 25% OF THE RATED HEAT INPUT OF THIS EQUIPMENT, PURSUANT TO RULE 1147(d)(1).
  - D. A WRITTEN NOTICE OF THE SOURCE TEST DATE SHALL BE SUBMITTED TO THE DISTRICT (ADDRESSED TO THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, ATTN: TODD IWATA, ENGINEERING & COMPLIANCE, 21865 COPLEY DRIVE, DIAMOND BAR, CA 91765) AT LEAST 14 DAYS PRIOR TO THE SOURCE TEST DATE SO THAT AN OBSERVER FROM THE DISTRICT MAY BE PRESENT.
  - E. THE TEST SHALL BE CONDUCTED BY A TESTING LAB, WHICH IS APPROVED BY THE EXECUTIVE OFFICER, UNDER THE DISTRICT'S LABORATORY APPROVAL PROGRAM IN THE REQUIRED TEST METHODS FOR CRITERIA POLLUTANTS TO BE MEASURED AND IN COMPLIANCE WITH DISTRICT RULE 304 (NO CONFLICT OF INTEREST).  
[RULE 1147]

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5. SAMPLING FACILITIES SHALL COMPLY WITH THE DISTRICT GUIDELINES FOR CONSTRUCTION OF SAMPLING AND TESTING FACILITIES PURSUANT TO RULE 217.  
[RULE 1147]
6. A SOURCE TEST PROTOCOL SHALL BE SUBMITTED TO THE DISTRICT (ADDRESSED TO THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, ATTN: TODD IWATA, ENGINEERING & COMPLIANCE, 21865 COPLEY DRIVE, DIAMOND BAR, CA 91765) NO LATER THAN 30 DAYS FROM THE DATE THIS PERMIT IS ISSUED, UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT. THE TEST PROTOCOL SHALL BE APPROVED IN WRITING BY THE DISTRICT BEFORE THE TEST COMMENCES. THE TEST PROTOCOL SHALL INCLUDE THE COMPLETED DISTRICT FORMS ST-1 AND ST-2 SPECIFYING THE PROPOSED OPERATING CONDITIONS OF THE EQUIPMENT DURING THE TEST, IDENTITY OF THE TESTING LABORATORY, A STATEMENT FROM THE TESTING LABORATORY CERTIFYING IT MEETS THE CRITERIA IN DISTRICT RULE 304(K), AND A DESCRIPTION OF THE SAMPLING AND ANALYTICAL PROCEDURES TO BE USED.  
[RULE 1147]
7. TWO COMPLETE COPIES OF THE SOURCE TEST REPORTS SHALL BE SUBMITTED TO THE DISTRICT (ADDRESSED TO THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, ATTN: TODD IWATA, ENGINEERING & COMPLIANCE, 21865 COPLEY DRIVE, DIAMOND BAR, CA 91765) WITHIN 30 DAYS AFTER THE SOURCE TESTING DATE. THE SOURCE TEST REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL TESTING DATA REQUIRED BY THIS PERMIT.  
[RULE 1147]
8. THE OWNER OR OPERATOR OF THIS EQUIPMENT SHALL SUBMIT THE RESULTS OF ALL PRELIMINARY TESTS THAT ARE CONDUCTED ON THIS EQUIPMENT FOR INFORMATIONAL PURPOSES TO THE DISTRICT (ADDRESSED TO THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, ATTN: TODD IWATA, ENGINEERING & COMPLIANCE, 21865 COPLEY DRIVE, DIAMOND BAR, CA 91765) WITHIN 45 DAYS AFTER THE TESTING DATE UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT.  
[RULE 1147]

**EMISSIONS AND REQUIREMENTS:**

9. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:  
  
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS  
PM: 0.1 GR/SCF, RULE 409  
CO: 2000 PPMV, RULE 407  
NOX: 30 PPMV, RULE 1147